

## REMARKS

Claims 1-17 were previously pending. Claims 6-8 and 15-17 were withdrawn from consideration in the Response to Restriction Requirement filed May 29, 2008. Claims 2-5 have been canceled. Claim 1 has been amended to depend on claim 9. New claims 18 and 19 have been added. Support for new claims 18 and 19 can be found at least in page 7, lines 18-27. No new matter has been introduced. Upon entry of this amendment, claims 1 and 6-19 will be pending.

### Claim Rejections -- 35 U.S.C. 103

- I. Rejections of claims 1-3 and 9-12 under 35 U.S.C. 103(a)

Applicants respectfully traverse the obviousness rejections of claims 1-3 and 9-12 over Toyobo Co. Ltd (JP 07100201), with evidentiary support from Deshpande et al. (US 2003/0215644). Claims 2 and 3 have been canceled, rendering the rejections of these two claims moot.

Toyobo Co. Ltd discloses a porous blood purification membrane containing polyamide imide structure units. See paragraphs [0004] and [0005]. The Office Action acknowledges that Toyobo Co. Ltd is “silent as to amide/imide bond ratio (recited in the instant claim 9).” The Office Action then states that an ordinary skilled in the art at the time of the invention would have known that the amide/imide bond ratio in a polyamide imide resin affects the **moisture stability** of the final product, as evidenced by Deshpande at paragraph [0054]. According to the Office Action, an ordinary skilled in the art would have modified the membrane of Toyobo Co. Ltd by adjusting the amide/imide bond ratio in order to “optimize the **moisture stability** of the final product.”

The **moisture stability** of the film, however, is irrelevant in the claimed inventions. The present application discloses a porous film that is used as a separator for lithium-ion secondary cells (page 3, line 25). Lithium-ion

secondary cells are **non-aqueous** electrolytic cells (page 1, line 15). Thus, the **moisture stability** of the film is NOT a concern in the claimed inventions. An ordinary skilled in the art would have no motivation to optimize the **moisture stability** of a film by adjusting the amide/imide bond ratio in the membrane of Toyobo Co. Ltd to obtain a film that is to be used in **non-aqueous** electrolytic cells, as disclosed in the instant application.

To the contrary, applicants have found, surprisingly, that an amide bond/imide bond ratio of from 10/90 to 45/55, as recited in claim 9, not only improves solvent solubility and the uniformity of the film, but also prevents deterioration of the electrolytic resistance. See page 5, lines 18-20. Neither Toyobo Co. Ltd nor Deshpande teaches or suggests the unexpected result of having an amide bond/imide bond ratio of from 10/90 to 45/55 in the film, as recited in claim 9.

For at least the forgoing reasons, claims 1-3 and 9-12 would not have been obvious over Toyobo Co. Ltd (JP 07100201). Withdrawal of the rejections is respectfully requested.

II. Rejections of claims 1, 4, 5, 9, 13 and 14 under 35 U.S.C. 103(a)

Applicants respectfully traverse the obviousness rejections of claims 1, 4, 5, 9, 13 and 14 under 35 U.S.C. 103(a) over Shinohara et al (US 2002/0055036) in view of Toyobo Co. Ltd (JP 07100201), with evidentiary support from Deshpande (US 2003/0215644). Claims 4 and 5 have been canceled, rendering the rejections of these two claims moot.

Shinohara discloses a battery separator membrane for lithium ion batteries (paragraph [0004]). Shinohara, as the Office Action acknowledges, does not disclose specific polyamide imide materials. The Office Action then states that one of ordinary skill in the art would have used the polyamide imide composition of Toyobo Co. Ltd in the separator membrane of Shinohara to obtain a porous, heat-resistant, polyamide imide film.

Applicants contend that there would not have been any motivation to modify the battery separator membrane of Shinohara by using the polyamide imide material disclosed in Toyobo Co. Ltd. The separator membrane of Shinohara is used in **non-aqueous** electrolytic cells (paragraph [0011]; Abstract). On the other hand, the membrane of Toyobo Co. Ltd is used in **aqueous** environments for blood purification (paragraphs [0003], [0013], and [0019]). Membranes used in non-aqueous environments are usually very different from those used in aqueous settings. Thus, one of ordinary skill in the art would not have had motivation or reasonable expectation of success to modify the membrane of Shinohara by using the polyamide imide material of Toyobo Co. Ltd.

Furthermore, neither Shinohara nor Toyobo Co. Ltd. teaches or suggests an amide bond/imide bond ratio of from 10/90 to 45/55, as recited in claim 9. Thus, Shinohara and Toyobo Co. Ltd., either alone or in combination, do not teach or suggest all the limitations of claim 9 (and the claims dependent therefrom). A *prima facie* case of obviousness has not been established.

For at least the forgoing reasons, claims 1, 4, 5, 9, 13 and 14 would not have been obvious over Shinohara et al (US 2002/0055036) in view of Toyobo Co. Ltd (JP 07100201). Withdrawal of the rejections is respectfully requested.

### **CONCLUSION**

The Examiner is encouraged to contact the undersigned regarding any questions concerning this amendment. In the event that the filing of this paper is deemed not timely, applicants petition for an appropriate extension of time. The Commissioner is authorized to debit Deposit Account No. 11-0600 the petition fee and any other fees that may be required in relation to this paper.

Respectfully submitted,

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